

REMARKS

I. Office Action Summary And Pending Claims

Claims 1-12 are presently pending. Claims 1 and 4 are the independent claims. In the Office Action, the Examiner rejected claims 1 - 4 under 35 U.S.C. §103(a) as being unpatentable over McLoone et al. (US 2002/0158844A1) in view of Hinckley et al. (US 2002/0030667A1). The Examiner also objected to claims 5-9 as being dependant upon a rejected base claim. Claims 10-12 are new.

II. Amendments and Remarks

The Examiner rejected claims 1 - 4 under 35 U.S.C. § 103(a) as being unpatentable over McLoone et al. in view of Hinckley et al. McLoone et al. generally discloses an input device for scrolling an image on a display screen in a vertical and/or horizontal direction by moving a wheel in a rotational and lateral manner. (McLoone et al., p. 3, ¶ 36). Vertical scrolling may be accomplished by rotational motion of the scroll wheel. (McLoone et al., p. 3, ¶ 36). Horizontal scrolling may be accomplished by lateral motion of the scroll wheel. (McLoone et al., p. 4, ¶ 41). Hinckley et al. generally discloses an input device using a touch-sensitive surface for scrolling an image on a display. (Hinckley et al., p. 4, ¶ 37). In particular, Hinckley et al. also discloses a technique for eliminating unintentional scrolling by analyzing finger touches to the touch sensitive surface to determine if scrolling is intended. (Hinckley et al., p. 6, ¶ 37).

Claims 1-3

With regard to claims 1-3, *prima facie* obviousness cannot be established from the references cited by the Examiner because there is no suggestion or motivation to combine the references. Independent claim 1 of the present application recites "wherein rotation of the rotatable element causes the viewable elements of the graphical display to scroll at a rate that is constant and independent of the rate of rotation of the rotatable element." As noted by the examiner, McLoone et al. fails to suggest or teach this recitation.

To overcome the deficiencies of McLoone et al., the Examiner cited Hinckley et al. as teaching "both the fixed rate and variable rate of scrolling (page 8, paragraph 71)." The examiner stated that:

[o]ne of ordinary skill in the art would recognize that a fixed or constant scroll rate is the simpler and easier way to implement scrolling display because, as in the case of Hinckley, parameters such as finger speed, finger pressure or frequency of taps would not be required to be mapped into corresponding scroll rate. Obviously, a fixed scroll rate has a limitation that generally it needs to be slow enough for a user to view the scrolling image.

Therefore it would have been obvious for one of ordinary skill in the art at the time of the invention was made to incorporate a fixed scrolling display as taught by Hinckley into McLoone's invention, because it offers an alternative choice to scrolling and also the extra implementation required is minimal.

Hinckley et al., however, fails to suggest or teach that a fixed or constant rate of scrolling can be combined with an input device having a rotatable element as the scrolling input. Hinckley et al. discloses that the "system may use a fixed rate of scrolling and/or variable rate of scrolling based on various factors such as finger speed, finger pressure/contact area, length of hold, number of taps, and/or frequency of taps." (page 8, ¶ 71). The device of Hinckley et al. presents multiple ways for a user to input scrolling commands that are specific to a touch-sensitive surface. Indeed, Hinckley et al. states "[m]any different functions for mapping the rate of scrolling to the user's input are possible." (page 8, ¶ 71). This flexibility for inputting commands allows the user to choose a fixed rate of scrolling as one input (for example, a finger tap) yet simultaneously have the capability to scroll at a variable rate with another input (for example, finger pressure). Although capable of scrolling at a fixed rate, Hinckley also states that a variable scrolling rate is advantageous because the "capability to continuously adjust the scrolling rate may provide a more controllable and predictable scroll interface." (page 8, ¶ 71). Thus, although capable of scrolling at a fixed rate, the multiple possible inputs unique to a touch-sensitive surface allow variable scrolling.

With regard to the present invention, Hinckley et al. makes no suggestion that the fixed rate of scrolling should be applied to any other input device such as a rotatable element. Unlike the multiple inputs of the touch-sensitive surface, a rotatable element only inputs scrolling commands through rotation of a rotatable wheel. Hinckley et al.

teaches away from applying the fixed rate of scrolling to a rotatable element because the user would lose the “capability to continuously adjust the scrolling rate [to] provide a more controllable and predictable scroll interface.” As a result, Hinckley et al. does not teach or suggest combining a fixed rate of scrolling with a rotatable element. Further, as stated by the Examiner, McLoone et al. does not teach or suggest the fixed rate of scrolling with the rotatable element. (See Office Action, p. 2). As a result, there is no suggestion or motivation to combine the references. Applicant respectfully requests that the Examiner withdraw the rejection with respect to claims 1-3.

Claim 4

With regard to claim 4, *prima facie* obviousness cannot be established from the references cited by the Examiner because all claim recitations are not taught or suggested by the prior art and because there is no suggestion or motivation to combine the references.

Independent claim 4 recites in part :

c. a motion signal interpreter in communication with the motion signal generator, the motion signal interpreter **providing one output signal at the end of a predetermined period of time** when one or more motion signals are detected within the predetermined period of time; and

d. a software driver in communication with the motion signal interpreter wherein the software driver accepts output signals from the motion interpreter and **generates line scrolling commands in response to reception of the output signals**, wherein the scrolling rate of the graphical display is constant when the rotatable element is rotated.

(emphasis added)

The prior art fails to disclose the generation of “line scrolling commands in response to reception of the output signals” as recited in present invention. The Examiner states that Hinckley et al. :

teaches discriminating between real and unintentional small movement by the user's finger on the touch-sensitive surface of the scrolling device 100 (figure 1A or 1B). He teaches the use of timeout periods to find out if a finger movement has exceeded a threshold, and if so, a flag would be set indicating real movement (scroll). **This setting of a flag upon the end of a timeout period when a real movement is detected reads on claimed provision of one output signal at the end of a predetermined period of time when one or more motion signals (real motion signals) are**

detected within the predetermined period of time (figure 5; page 6, paragraph 55,56).

(Office Action, p. 4) (emphasis added).

Thus, according to the Examiner, the flag of Hinckley et al. corresponds to the output signal of the present invention. The flag of Hinckley et al., however, merely represents the state of "moving" or "not moving." ('Hinckley et al., p. 6, ¶ 56). Hinckley et al. does not disclose that scrolling commands are generated in response to reception of the flag. Unlike the present invention where line scrolling commands are generated in response to reception of an output signal, line scrolling commands are not generated in response to reception of the flag. As a result, Hinckley et al. does not disclose that a software driver accepts output signals from the motion interpreter and generates line scrolling commands in response to reception of the output signals

Even if the Examiner determines that the Hinckley et al. reference discloses that the software driver accepts output signals from the motion interpreter and generates line scrolling commands in response to reception of the output signals, *prima facie* obviousness cannot be established from the references cited by the Examiner because there is no motivation or suggestion to combine the Hinckley et al. and McLoone et al. references. The Examiner stated that it would have been obvious for one of ordinary skill in the art to combine Hinckley et al.'s "Moving/Not Moving Detection" into McLoone et al.'s scrolling display input device "because of the benefit of eliminating unintentional scrolling of display images." (See Office Action, p. 4).

There is no motivation to combine these devices, however, because the "Moving/Not Moving Detection" of Hinckley et al. addresses a problem that is unique to a touch-sensitive surface. Hinckley et al. discloses that "it may be desirable to ignore unintentional small movement by the user's finger on the touch-sensitive surface of the scrolling device 100." (See Hinckley et al. p. 6 ¶ 55). Hinckley further explains that "[t]his is beneficial where, for instance, a user cannot control his or her finger to be absolutely still when holding the finger in one place on the touch-sensitive surface." (See Hinckley et al. p. 6 ¶ 55). No where does Hinckley et al. suggest that "Moving/Not Moving Detection" should be applied to any other input device such as a rotatable element. Moreover, McLoone et al. fails to disclose that an input device having a scroll

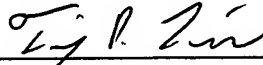
wheel has an unintentional movement problem or that it should have "Moving/Not Moving Detection." Control and sensitivity of a scroll wheel do not subject it to the same problems experienced by the touch-sensitive surface of Hinckley et al.

Additionally, with regard to claim 4, the Examiner stated that it would have been obvious for one of ordinary skill in the art to combine a fixed rate scrolling display as taught by Hinckley et al. with the device disclosed in McLoone et al. For the same reasons explained above with respect to claims 1-3, there is no motivation or suggestion to combine the fixed rate scrolling display as taught by Hinckley et al. with the device disclosed in McLoone et al. As a result of the above, Applicant respectfully requests that the Examiner withdraw the rejection with respect to claim 4 and the objections to claims 5-9.

CONCLUSION

In light of the above amendments and remarks, Applicant submits that claims 1-12 are in condition for allowance.

Respectfully submitted,



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